ACCUWEIGH

AD-4402

MULTI-FUNCTION DIGITAL INDICATOR

The AD-4402 is designed for batching operations and can also be incorporated into systems using Field Bus such as CC-Link, DeviceNet and PROFIBUS.

The AD-4402 has almost all the functions, user-friendly operating procedures and software you need for your weighing system.

by A&D Weighing

HIGHLIGHTS

- Hopper Gate Control is Done by Forecast Control Mode with 1ms-High Speed Response
- Select from 50+ Functions for Each of the 11 Control Inputs and 11 Control Outputs
- Incorporates Recipe and Mixing Modes
- Meets Fieldbus Requirements by Employing CC-Link, DeviceNet and PROFIBUS

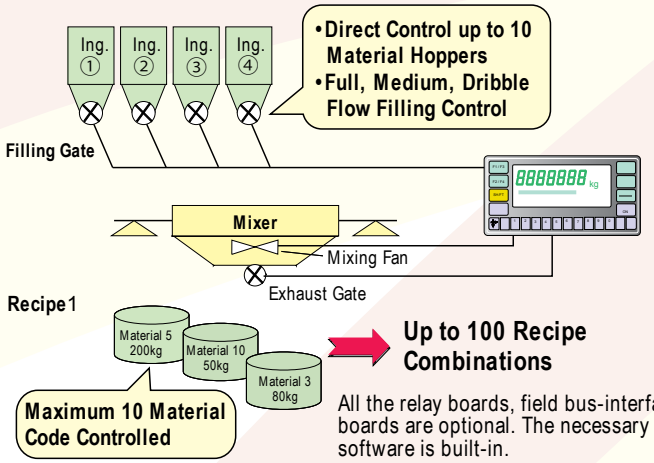
FEATURES

- Large and Easy to See Cobalt Blue Vacuum Fluorescent Display (VFD)
- Uses a Ten Key Pad and Function Buttons That are Designed for Ease of Operation and Understanding
- The Main Display Has a 7-Digit VFD with 18mm Tall Characters
- The Sub Display has 108 x 5mm Tall Characters and Shows the Values and Error Comments
- Pre-Programmed with Multiple Sequences and Functions for Filling Machines, Simple Mixing Machines and Other Applications
- Stores 100 Data for Raw Materials and 100 Data for Recipe Codes
- RS-485 Serial Interface Standard Feature Allows You to Link Up to 32 Units to the Display and Supports the Modbus Function
- The Monitor Function Shows Each Operating Interface and Provides a Confirmation on the Display
- The Compact Body Meets DIN Requirements, While Minimising the Depth of the Indicator to 135mm
- With the Proper Optional Interface, the AD-4402 is Compatible with CC-Link, DeviceNet, PROFIBUS

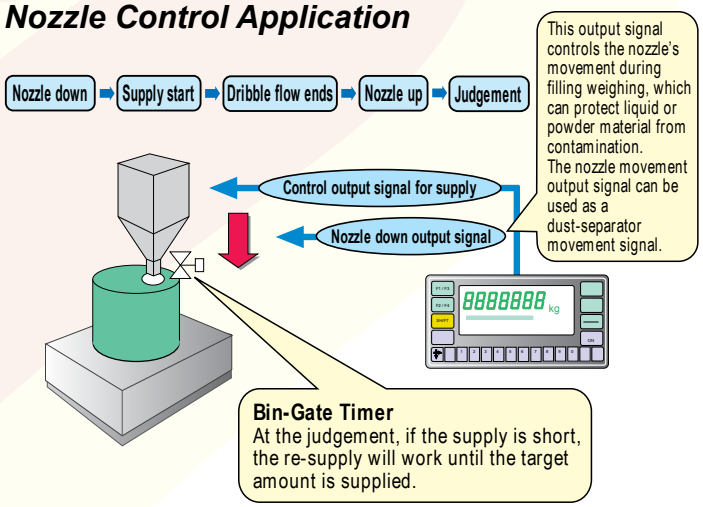
APPLICATIONS

The AD-4402 can be incorporated in various applications that integrate complex systems, thereby facilitating a wide variety of sequences, such as basic filling/discharge, recipe, mixing, compensation and preliminary sequences.

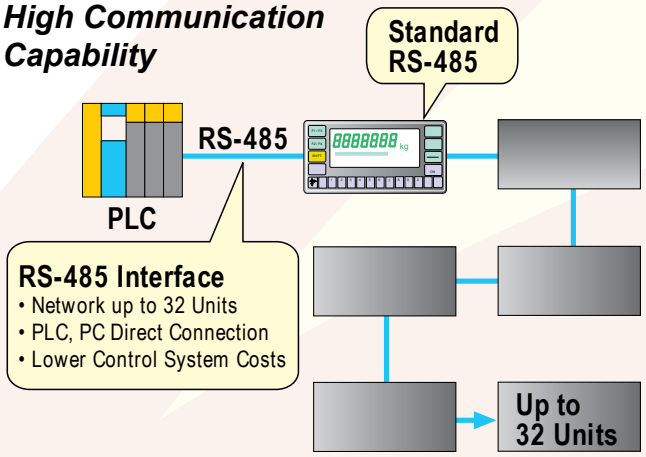
Mixing System Control by AD-4402



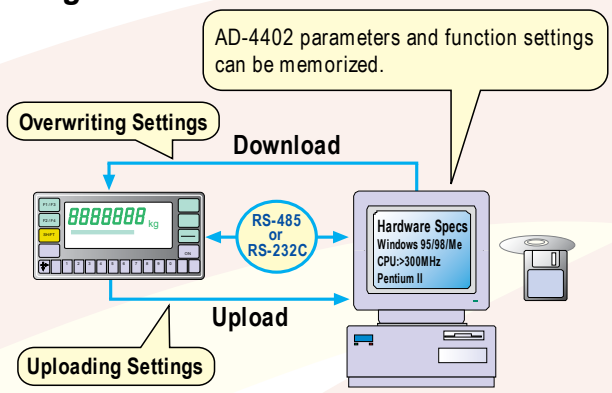
Nozzle Control Application


Nozzle down
Supply start
Dribble flow ends
Nozzle up
Judgement
This output signal controls the nozzle's movement during filling weighing, which can protect liquid or powder material from contamination.
The nozzle movement output signal can be used as a dust-separator movement signal.
Control output signal for supply
Nozzle down output signal
Bin-Gate Timer
At the judgement, if the supply is short, the re-supply will work until the target amount is supplied.

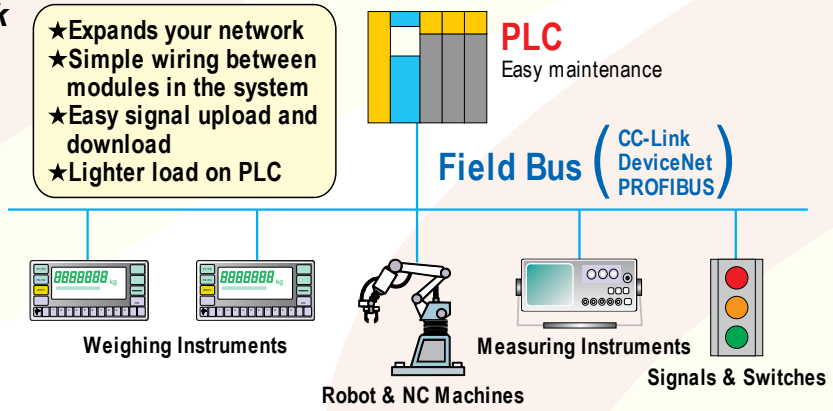
High Communication Capability



Overwriting and Memorising Setting Parameters via PC



Field Bus Network



OTHER FEATURES

Here is why we recommend the AD-4402 Multi-Function Weighing Indicator for your weighing system.

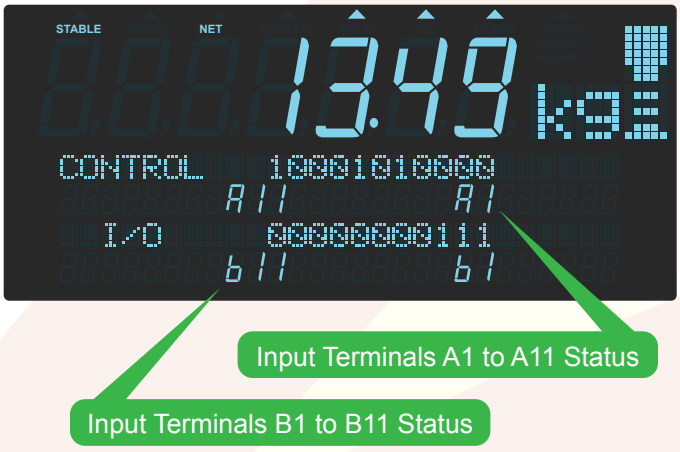
★ SEQUENTIAL WEIGHING MODE

The sequential weighing mode directly outputs control signals such as supply, discharge, preliminary-full-medium-dribble flow, recipe and mixing materials and nozzle control without PLC.

★ INTERFACE MONITORING FUNCTION

Control I/O, RS-232C,-422,-485 Interface, Current Loop, A/D Converter, BCD Output, Relay output, Parallel I/O, Analog output, etc. can be monitored to see if they are working correctly. You can see each visually during operation without stopping the weighing system.

EXAMPLE INTERFACE MONITORING FUNCTION (CONTROL I/O STATUS DISPLAYED)



★ 11 CONTROL INPUTS/11 CONTROL OUTPUTS

50+ functions (such as Full Flow, Over, Under, Discharge Bin, Net Display, etc.) for each of the 11 Control Inputs and 11 Control Outputs, depending on the weighing system.

★ STANDARD RS-485

32 indicators can be hooked up to the PLC (programmable logic controller), a PC (personal computer) or other equipment that supports Modbus. This is useful for control commands input and recalling/updating the code memory.

★ OPTIONAL FIELD BUS NETWORKING INTERFACE BOARDS FOR CC-LINK, DEVICENET OR PROFIBUS

To meet increasing requirements for networking with field bus systems, there are three bus-interface options (CC-Link, DeviceNet and PROFIBUS), which can be hooked up directly to the PLC units. More than two indicators can be hooked up to the PLC at one time.

★ INTERACTIVE MESSAGES

Messages that assist current operations are shown on the display and allow anyone to operate the AD-4402 without an instruction manual. Just follow the interactive setting and operating procedures on the display. Sometimes mistakes happen. When they do, a message is displayed so you can recognise the situation and take corrective steps.

★ DIGITAL SPAN AND GRAVITY ACCELERATION COMPENSATION

When you cannot use an actual calibration weight due to location, just input the loadcell rated output voltage for zero point and full capacity calibration. After moving the calibrated weighing system, recalibrate it by inputting the local gravity acceleration value.

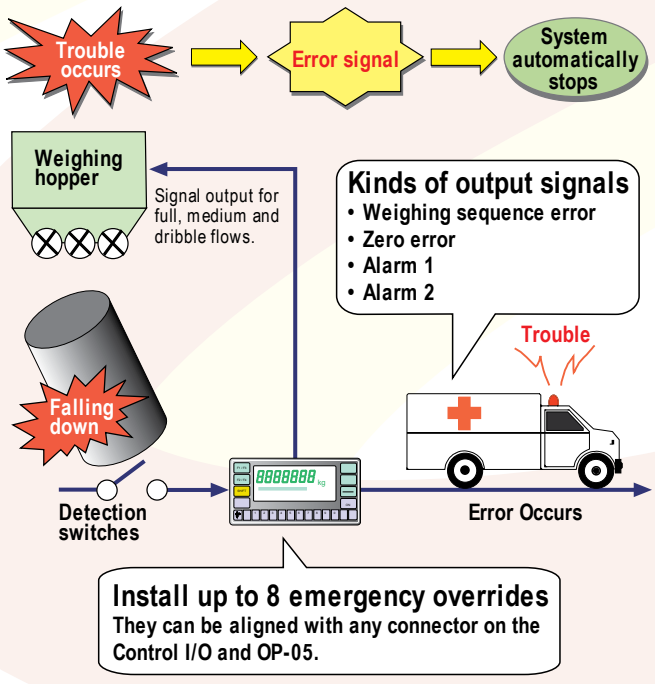
★ CALIBRATED A/D BOARD

The A/D board is calibrated before shipment and guaranteed to 1/500 accuracy. You can quickly replace the A/D board if there is a malfunction.

★ SAFETY CHECK FUNCTION

This function is used to stop the sequence when an error or an emergency occurs. When the safety function is used, an error code is displayed and an error signal is output automatically to the PLC to stop the system. Up to eight emergency overrides can be installed.

Safety Check Function (Error Alarm Signal Output)



DISPLAY FEATURES

On the main and sub-displays, a Vacuum Fluorescent Display is used for easy visual recognition. Operation keys are arranged by function for easy setting and recalling the contents. What's more, there are messages for each setting and function and current status on the sub-display. Even without an instruction manual, you can handle many emergencies.

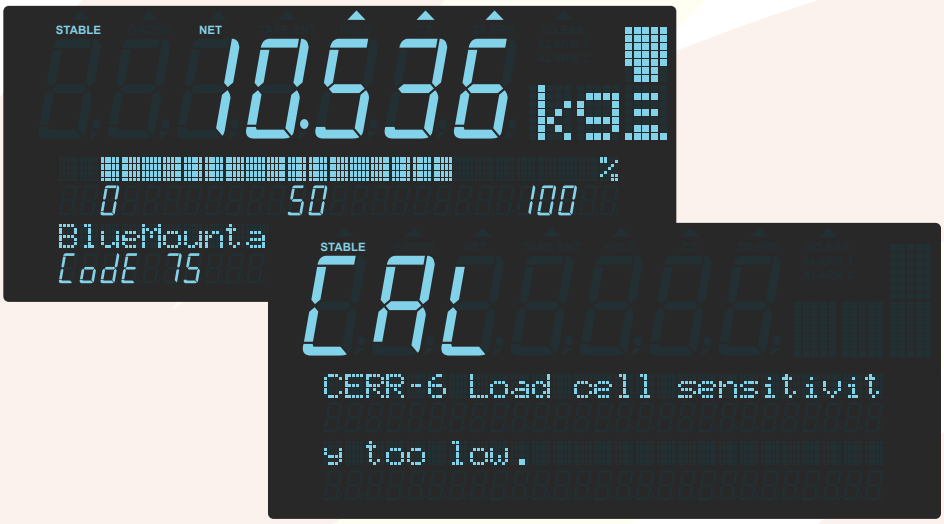
For harsh environment-use such as in moisture, water and dust environments, the AD-4402 display is IP-65 compliant.

For speedy and timely operation, keys are larger and functionally arranged.

Contents by Code and setting and status messages are displayed on the sub-display.

Alphanumeric input is available using the setting input-keys.

DISPLAY EXAMPLES

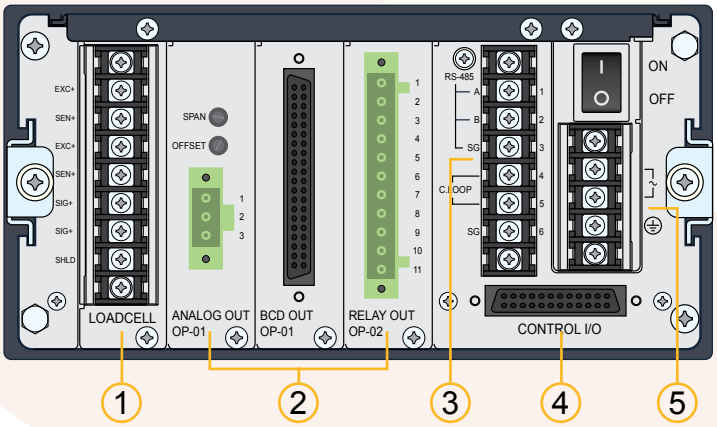


- The main display has 18mm tall characters and a 7-digit VFD for the weight value displays.
- The code name, code number, total, set-point, counts, bar graph and judgment can be displayed on the subdisplay.
- Displays calibration, current status (like setting procedures), error, malfunction and trouble-shooting messages.

REAR PANEL FEATURES

There are many features, like selectable I/O control terminals, standard RS-485 I/F and PLC field-bus networking interfaces such as CC-Link, DeviceNet and PROFIBUS.

1. Up to 8 x 350Ω Loadcells, Replacement A/D Board Available, Accuracy Guaranteed to 1/500
2. 3 x Options Slots – Up to 3 Options Installed
3. External Control RS-485 Standard, Up to 32 Units Controlled Simultaneously
4. Programmable Control I/O – Input 11/Output 11
5. AC Power 85~250V (AD-4402 Only)
   DC 24V (AD-4402D Only)



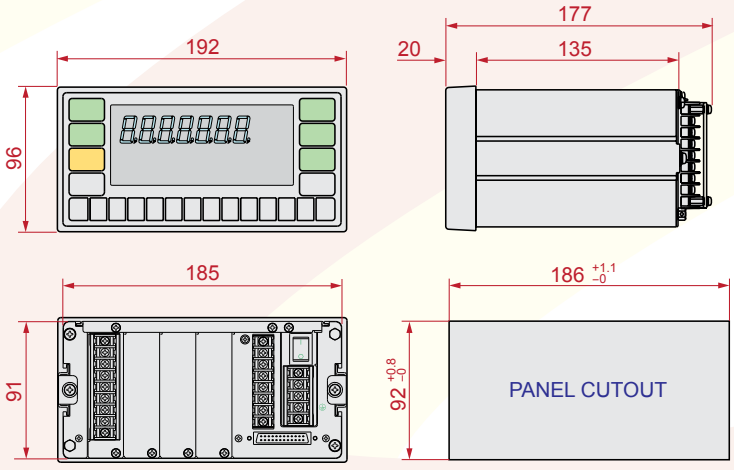
SPECIFICATIONS

ANALOG & A/D CONVERSION	
Excitation	10V ±5%, 230mA, Remote Sensing, Maximum 8 x 350Ω Loadcells
Input Sensitivity	Minimum of 0.3μV/Division
Operating Modes	Single Range
Zero Cancellation	0mV to 20mV (0mV/V to 2.0mV/V)
Span Adjustment	0mV to 32mV (0mV/V to 3.2mV/V)
Non-Linearity	±0.01% of Full Scale or Less
Temperature Co-Efficient	Zero ±(0.2μV+8ppm of Dead Load)/ºC (Typically) Span ±8ppm/ºC of Reading (Typically)
Input Impedance	10MΩ Minimum
Input Noise	±0.6μVp-p or Less
Display Resolution	Up to 16,000 Divisions, Minimum of 0.6μV/Division
Internal Resolution	1,000,000 Internal Counts
A/D Conversion Method	Delta Sigma
A/D Conversion Speed	Approximately 100 Times/Second
DIGITAL	
Main Display	Blue Fluorescent, 7-Segment, 7-Digit, 18mm Characters
Sub Display	Blue Fluorescent, 7-Segment (54-Digits)/5x7 Dots (54-Digits), 5mm Characters
Status Displays	8 Displays/10 Symbols (5x7 Dots)
GENERAL	
Power	AD-4402: 85VAC ~ 240VAC, 50/60Hz AD-4402D: 24VDC +10%/-15%
Power Consumption	Approximately 30VA
Operating Temperature	-5°C ~ +40°C
Operating Humidity	Less than 85% Relative Humidity (Non-Condensing)
Net Weight	Approximately 1.8 kg
Dimensions	192mm(W) x 135mm(D) x 96mm(H) With Terminal Posts: 192mm(W) x 177mm(D) x 96mm(H)
Panel Cutout	186mm(W) x 92mm(H)
EXTERNAL INPUT/OUTPUT	
Control I/O	Inputs: 11, Outputs: 11
Standard Serial I/F (Ch.1)	RS-485 (Terminals)
Standard Serial I/F (Ch.2)	Current Loop (Terminals)

OPTIONS

- OP-01-4402 BCD Output
- OP-02-4402 Relay Output
- OP-03-4402 RS-422/RS-485 I/O
- OP-04-4402 RS-232C I/O
- OP-05-4402 Parallel I/O
- OP-07-4402 Analog Output (4-20mA)
- OP-20-4402 CC-Link Interface
- OP-21-4402 DeviceNet Interface
- OP-22-4402 PROFIBUS Interface

DIMENSIONS



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